

LOWER COLUMBIA FISH RECOVERY BOARD

2004 INTERIM HABITAT STRATEGY



**Lower Columbia Fish Recovery Board
2004 Interim Habitat Strategy**

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Section 1. Introduction

This document sets forth the goals and strategies the Lower Columbia Fish Recovery Board (LCFRB) will use to:

- Identify and prioritize habitat restoration and protection needs; and
- Evaluate and rank habitat project proposals.

In the near-term, this strategy will assist the Board and project sponsors to better identify habitat restoration and protection needs in a way that will help maximize benefits for fish recovery and ensure the most effective use of limited resources. It replaces the interim habitat strategy initially adopted by the Board in 2001 and revised in 2002.

The strategy provides fish recovery and habitat recovery goals. It prioritizes fish populations and habitat restoration and protection needs. It sets measures to increase public support and participation in habitat protection and restoration efforts. And, finally, it sets forth the means the Board and TAC will use to evaluate and rank project proposals.

While this strategy represents a significant refinement of the Board's previous strategy, it remains an interim product. It will be further refined and modified as the Board and its partners continue their efforts to develop a comprehensive salmon and steelhead recovery plan for the lower Columbia region. Ultimately, the strategy will evolve to be an element of that plan and will be integrated with a broader range of actions intended to return fish populations to healthy, harvestable levels. Finally, it should be noted that this habitat strategy sets priorities by ranking various stream reaches and habitat attributes based on their relative importance to targeted fish species and populations. Project sponsors should use the information and priorities in this strategy, as well as other existing studies or documents, to identify and to support habitat restoration and protection projects.

Section 2. Overview

This habitat protection and restoration strategy builds on prior versions of the Board's strategy by incorporating new data and analyses conducted as part of the regional recovery planning effort.

Over the last 18 months, extensive information has been collected on species and population status and trends and environmental conditions and human activities that affect the health and viability of fish throughout their life cycle. Various analytical tools have been employed to help organize and understand the implications of this wealth of data. These include the Ecosystem Diagnostic and Treatment (EDT) model and the Integrated Watershed Assessment (IWA) methodology. This information and analytical results have been combined with recovery criteria developed by the NOAA-Fisheries Technical Recovery Team to refine recovery goals, improve the ranking of salmon and steelhead populations, and better identify and rank watersheds, subwatersheds, river reaches and habitat conditions according to their potential contribution to achieving healthy, harvestable population levels.

The strategy contains the following elements:

1. Fish Recovery Goals and Population Priorities
2. Habitat Protection and Restoration Goals and Priorities
3. Strategy Implementation Policies and Measures

Section 3. Fish Recovery Goal and Population Priorities

Chinook and chum salmon, steelhead, and bull trout have been listed as threatened species under the federal Endangered Species Act (ESA) in the Lower Columbia Salmon Recovery Region. Coho salmon is a candidate for listing. **It is the goal of the LCFRB to return these lower Columbia salmon and steelhead populations in Washington to healthy, harvestable levels.** This means that salmon and steelhead populations will remain viable after desired levels of direct and indirect utilization. Direct utilization includes harvest. Indirect utilization includes mortality or reduced productivity resulting from such human activities as development and natural resource use.

As a first step in preparing species and population specific recovery goals, the LCFRB has developed a minimum actions recovery scenario (MARS) working draft¹. MARS identifies specific populations and recovery goals needed to meet the recovery criteria developed by the NOAA-Fisheries Technical Recovery Team (TRT)² (see [Appendix I](#)). These criteria address abundance, productivity (population growth rate), diversity, spatial distribution, and habitat. Additional considerations in formulating the minimum actions scenario included:

1. The current health or viability of each population;
2. Whether a population was considered to be a genetic legacy;
3. The potential abundance of each population if habitat were restored to Properly Functioning Conditions (PFC⁺)³;
4. The estimated ease of recovering a specific population relative to other populations of the same species; and
5. Available opportunities for increased effectiveness and efficiency by focusing recovery on efforts that would benefit multiple species.

The minimum actions scenario ranked populations using three categories or tiers. These tiers are listed below in priority order from highest to lowest:

1. Primary Populations: These are populations that must be restored to a high (95 - 99% probability) level of persistence over 100 years. In general, these included populations that were considered to be currently the closest to viable and had the highest potential if habitat conditions were returned to PFC⁺. It also included all genetic legacy populations regardless of their current viability or potential. In some instances it was necessary to include weak or extirpated populations in order to meet the NOAA-Fisheries TRT criteria for the distribution of populations across the Lower Columbia Evolutionarily Significant Unit (ESU).
2. Contributing Populations: These are populations that must be restored to a moderate (75-95% probability) or higher level of persistence over 100 years in order to ensure a viable ESU. In general, these populations were considered to currently have a low to moderate probability of persistence.
3. Stabilizing Populations: These are populations that would be sustained at their current level of persistence or viability. NOAA-Fisheries TRT criteria specify that no population be allowed to deteriorate until other populations are recovered sufficiently to ensure a

¹ Lower Columbia Minimum Actions Recovery Scenarios (MARS) for Washington Salmon and Steelhead March 5, 2004 draft

² Interim Report on Viability Criteria for the Willamette and Lower Columbia Basin Pacific Salmonids, Willamette/Lower Columbia Technical Recovery Team, March 2003

³ PFC⁺ is properly functioning tributary and estuary conditions.

viable ESU. These are generally weak or extirpated historic populations that do not need to improve to meet the NOAA-Fisheries TRT population distribution criteria and have a low abundance potential or estimated ease of recovery. While these populations are not the key focus of recovery, habitat protection and restoration will be required to avoid any further decline.

Tier listing of populations by species and watershed are provided in [Appendix II](#). It should be noted that population priorities and specific population recovery goals for abundance and productivity may be revised or adjusted as recovery planning progresses in order to:

1. Increase the likelihood or chances that recovery efforts will achieve viable levels for each species; and
2. Accommodate desired levels of direct or indirect utilization.

Section 4. Habitat Protection and Restoration Goals and Priorities

It is the goal of the LCFRB to provide the habitat necessary to support healthy, harvestable populations of ESA listed fish species in the lower Columbia region of Washington.

The Lower Columbia Salmon Recovery Region is large and diverse. Encompassing 3,246,968 square miles, it contains 21 river basins with over 1700 river miles. Watershed and habitat conditions vary widely among the basins. All have been altered by a wide range of human activities including urban and rural development, agriculture, and forestry. Some have been affected to a greater degree than others. The two largest basins, the Cowlitz and Lewis, have hydroelectric complexes and large reservoirs. The lower reaches of the Cowlitz, Lewis, and Washougal have been heavily impacted by urban development, their channels confined and diked, their floodplains and wetlands lost or isolated.

The region is inhabited by 5 salmonid species. Four are listed as threatened under the ESA including chum and Chinook salmon, steelhead, and bull trout. Coho salmon are a candidate for listing. Together these 5 species are comprised of 69 separate and distinct populations in the LCFRB region. The condition and health of the populations vary from extirpated to close to viable. Moreover, each has its own unique life histories and habitat requirements.

This complex array of biological and physical habitat conditions makes setting habitat restoration and protection priorities within watersheds and across the region a challenging and complicated task. Using the recovery-based population rankings, available information on fish distribution and habitat and watershed conditions, and the analytical methods and tools discussed below, the habitat strategy ranks:

1. Watersheds within the region;
2. Geographic areas (subwatersheds) within each watershed;
3. Reaches within each subwatershed; and
4. Habitat and watershed attributes or factors within each reach.

The approach used in each of these ranking steps is described below. This progressive ranking from the regional level to habitat factors at the reach level enables project sponsors to identify high value habitat restoration and protection needs.

A. Analytical Methods and Tools

Three different analytical approaches or tools were utilized in addressing habitat factors: the Ecosystem Diagnosis and Treatment (EDT) model; the Integrated Watershed Assessment (IWA) model; and the Salmon and Steelhead Habitat Inventory Assessment Project (SSHAP) blockage inventory.

(1) Ecosystem Diagnosis and Treatment (EDT):

EDT is based on the relationships between aquatic habitat characteristics and fish performance. Model inputs include descriptions of the physical stream environment, at a reach level, which are then related through a set of rules to life-stage specific survival. These survival characteristics are then integrated across the entire life history of the population. Results include estimates of population productivity, capacity, equilibrium abundance, and diversity. [Appendix III](#) contains a more detailed discussion of the EDT model and how it has been applied in the lower Columbia region.

a. EDT Reach Analysis

The EDT reach analysis allows the identification of areas within watersheds that serve as current and/or potential strongholds for productivity and abundance, and that help maintain life history and spatial diversity for populations. Reach analysis identifies reaches based on their relative preservation and restoration value. Preservation values are an indication of the potential reduction in population performance if current habitat conditions were allowed to deteriorate. Restoration values are an indication of potential gains in population performance if current habitat conditions were restored to historic conditions. Reach analysis results are specific to each fish species because of the different fish habitat requirements of each.

This analysis provides the basis for the ranking of reaches within a watershed for each species. Results are typically displayed in a graphical format that is often referred to as a ladder or tornado diagram (Figure 1). [Appendix III](#) provides more detailed information on EDT reach analysis.

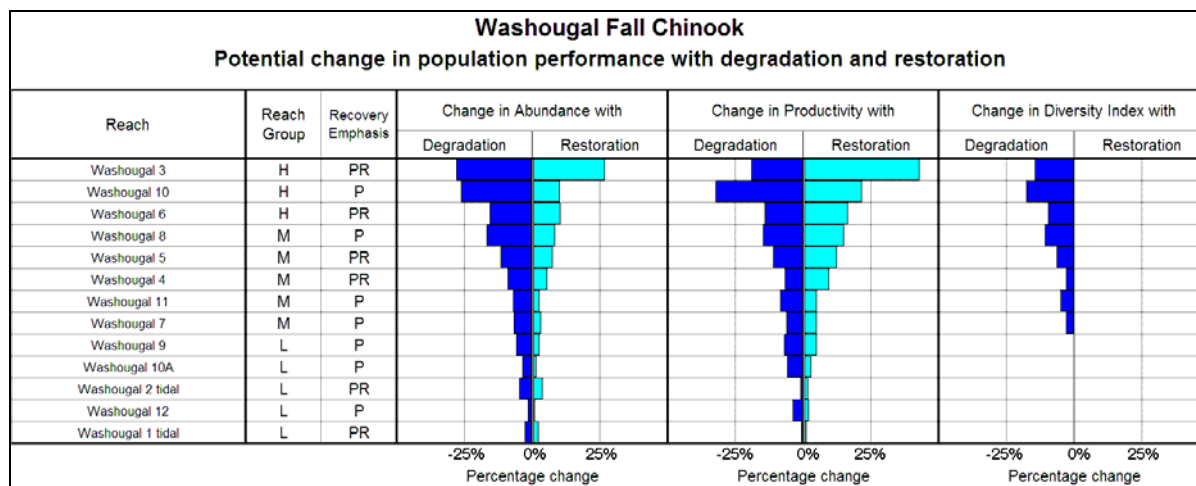


Figure 1. Washougal River subbasin fall chinook ladder diagram. The rungs on the ladder represent the reaches and the three ladders contain a preservation value and restoration potential based on abundance, productivity, and diversity. The units in each rung are the percent change from the current population. For each reach, a reach group designation and recovery emphasis designation is given. High Potential (H) reaches represent the highest priority for preservation and restoration. See [Appendix III](#) for more information on interpretation of EDT ladder diagrams.

Appendix IV provides specific habitat and fish information for each watershed and includes these tornado diagrams for each species for each watershed.

b. Habitat Factor Analysis

Another output of the EDT is the habitat factor analysis. An assessment of the effect of degraded habitat attributes in specific reaches is necessary to evaluate causes of population decline and to identify recovery measures. In the EDT reach analysis, the relative impact of the various habitat attributes is evaluated (see [Appendix III](#) for more details). The model accomplishes this by artificially restoring each of the habitat attributes in a reach to historic conditions one at a time and evaluating the change to reach productivity, abundance and diversity. This is done for individual life stages within individual reaches. These results are displayed in what are commonly termed “consumer report diagrams” (Figure 2). Appendix VI includes “consumer report diagrams” for every EDT reach for all species modeled.

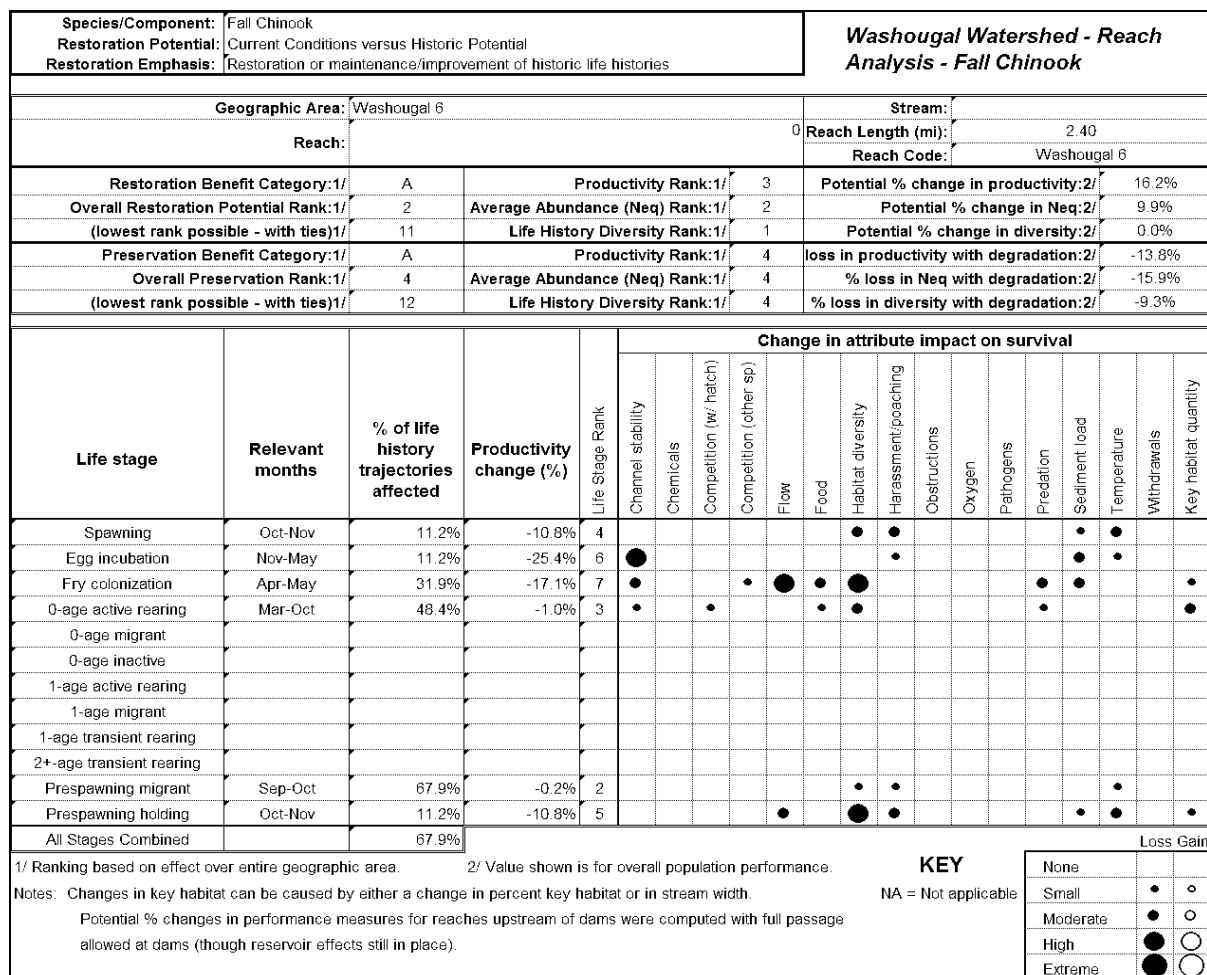


Figure 2. Example of “Consumer Report Diagram” for Washougal Fall Chinook. Top rows give information on preservation and restoration benefit. Note that “Benefit category” does not apply for our analysis. Dots represent the relative impact of the habitat attributes (survival factors) on life-stage specific productivity in the reach. One of these reports is created for each reach utilized by the population.

The analysis can also be expanded to the population-scale by combining all life stages within a reach and weighting the reach values according to the relative contribution of the reach to overall population abundance. Similar to Consumer Report Diagrams, the

result is a chart with sized dots representing the level of impact of the 17 habitat attributes, only there is just one dot per reach and all the reaches for a population are combined in one chart (Figure 3). These are referred to as Habitat Factor Analysis Diagram (or 'dot charts'). Appendix IV includes the Habitat Factor Analysis diagrams for each species in each watershed description.

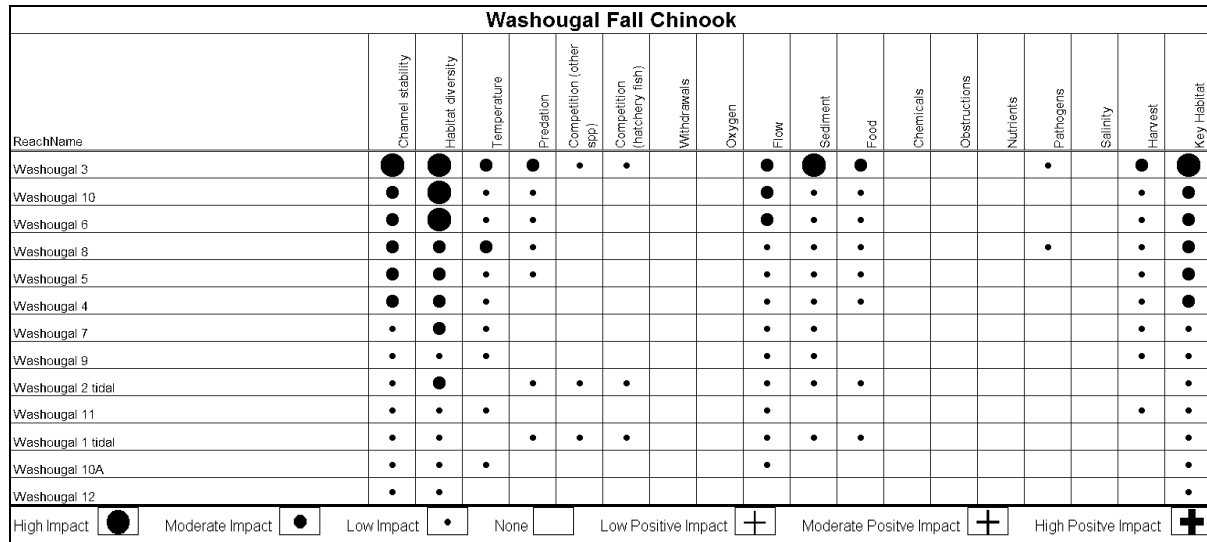


Figure 3. Example of Habitat Factor Analysis diagram for Washougal Fall Chinook. The dots represent the relative impact of level 3 habitat attributes (survival factors) within all reaches utilized by the population.

(2) Integrated Watershed Assessment (IWA):

The Integrated Watershed Assessment (IWA) is a GIS based screening tool used to examine the current condition of key watershed processes that directly or indirectly influence habitat conditions affecting fish populations in the Lower Columbia Region (Details on the IWA methodology are located in [Appendix VII](#)). The results of this analysis are suggestive of the watershed process conditions and general categories of habitat protection and restoration measures that are needed at both the subwatershed and watershed scales.

Three fundamental measures of watershed function were modeled at the subwatershed scale (3,000 to 12,000 acres drainage areas) – Sediment supply, hydrology, and riparian. Hydrology and sediment supply were also measured at the watershed scale. Process conditions were identified as Functional (F), Moderately Impaired (M), or Impaired (I). A functional rating indicates that the current condition of that subwatershed process is comparable to natural conditions. An Impaired rating indicates highly degraded conditions that are likely contributing to limiting factors. Projects focused within or downstream of impaired watershed process conditions should consider how impaired processes would impact project proposals and sequencing. Appendix IV contains information and maps on the subwatershed process conditions for all lower Columbia River watersheds.

(3) Habitat Blockage Inventory:

The Washington Department of Fish and Wildlife's Salmon and Steelhead Habitat Inventory Assessment Project (SSHAP) currently provides an inventory and information on fish passage barriers. LCFRB has used this information to map known passage and identify potential habitat across the region. [Appendix IX](#) contains maps and spreadsheets of known barriers in the Lower Columbia region. This barrier analysis provides general direction regarding the number of miles

of potential habitat in each watershed; however, it does not provide sufficient detail to identify barrier priorities. Please contact LCFRB staff for more information on specific passage barriers. LCFRB is working on a comprehensive barrier inventory for the region. Restoring access to quality habitat is the LCFRB's highest priority habitat restoration action.

B. Watershed Rankings

The watersheds within the lower Columbia region are ranked based on the number of populations they support and the role (primary, contributing, stabilizing) the populations are likely to play in achieving recovery of their respective species. This highlights watersheds where habitat restoration and protection efforts offer the greatest opportunity to benefit the recovery of multiple populations. Table 1 below shows the watershed rankings within the three strata.

			Species							
			Fall Chinook (Tule)	Fall Chinook (Bright)	Spring Chinook	Chum	Winter Steelhead	Summer Steelhead	Bull Trout	Coho
Watersheds Ranking By Strata	Coast	Grays/ Chinook	P			P	P			P
		Elochoman/ Skamokawa	P			P	C			P
		Mill/ Abernathy/ Germany	S			C	P			C
	Cascade	East Fork Lewis	P			P	P	P		P
		Kalama	C		P	C	P	P		
		North Fork Lewis		P	P	S	C	S	P	C
		Lower Cowlitz	C			P	C			P
		Washougal	C			P	C	P		
		Upper Cowlitz	S		P		C			C
		Cispus			P		C			C
		Coweeman	P			S	C			C
		South Fork Toutle	S		S		P			C
		North Fork Toutle	S		S		C			P
		Salmon Creek	S			S	S			
		Tilton			S		S			
	Gorge	Lower Gorge	P			P	P			P
		Upper Gorge	S			P	S	P		P

Table 1: Watershed Rankings by Strata. P= Primary populations; C=Contributing populations; S=Stabilizing populations

C. Subwatershed Rankings

Each watershed was divided into subwatersheds or hydrological units ranging in size from 3,000 to 12,000 acres. Each subwatershed contains from 1 up to approximately 7 EDT reaches. Subwatersheds are assigned a tiered ranking based on importance or rank of the reaches they contain. The ranking of reaches is discussed in Subsection D below. Scaling up from reaches to the subwatershed level was done in recognition that actions to protect and restore critical reaches might need to occur in upstream areas of the subwatershed. For example, sediment inputs that impact high potential reaches may originate in other areas of the subwatershed. Project sponsors should evaluate habitat protection and restoration needs and actions at the subwatershed scale as well as the reach scale. Subwatersheds were ranked according to the following rules:

1. Group A Subwatersheds include one or more Tier 1 reaches.
2. Group B Subwatersheds include one or more Tier 2 reaches, but no Tier 1 reaches.
3. Group C Subwatersheds include one or more Tier 3 reaches, but no Tier 1 or 2 reaches.
4. Group D Subwatersheds include only Tier 4 reaches.

D. Reach Ranking

Reach Ranking

Within a given watershed, reaches were prioritized using the EDT preservation/restoration reach analysis. Reaches were first ranked within individual species (populations) and grouped into categories of High, Medium, and Low, which reflect their potential contribution to population performance. The reach rankings of all species within a basin were then combined, using the population rating (i.e. primary, contributing, stabilizing) as a weighting factor to place greater emphasis to high priority reaches for primary populations. The final result is a Tiering of reaches that reflects priorities within and between populations.

The ranked order of reaches within individual populations was obtained through the EDT preservation/restoration reach analysis. This analysis models the potential change in population performance (abundance, productivity, diversity) for individual reaches assuming: 1) full reach restoration, and 2) full reach preservation. Population performance is measured by each of three measures: abundance, productivity, and diversity. The change in population performance was normalized to 1000m of channel length to remove any bias due to reach length. Thus, the percentage change values presented in the ladder diagrams reflect the percentage change in population performance per 1000m channel length. Reach rankings were determined by summing the potential change values for preservation and restoration across the 3 performance measures. Reach rankings therefore reflect the contribution of the reach to current AND potential population performance.

The binning of reaches into High, Medium, and Low categories was conducted using the following methodology. Beginning with the top ranked reach and working down in ranked order, the running sum of performance values (NON-normalized in this case) was calculated until at least one-third of the cumulative sum of all reach performance values was reached. These reaches were placed into the High category. The process was continued until two-thirds of the cumulative sum was reached and these reaches were designated as medium priority. The remainder were designated low priority. This process results in approximately one-third (or slightly less on average) of the channel lengths allocated to the high category, one-third to the medium category, and one-third to the low category.

These species-based reach classifications were combined with population categories/priorities from the Minimum actions Scenario to categorize reaches in to priority tiers within each watershed. The following rules were used:

1. Tier 1 Reaches include all high potential reaches for one or more primary populations;
2. Tier 2 Reaches include all reaches not included in Tier 1 and which are medium potential reaches for one or more primary species and/or all high potential reaches for one or more contributing populations;
3. Tier 3 Reaches include all reaches not included in Tiers 1 and 2 and which are medium potential reaches for contributing populations and/or high potential reaches for stabilizing populations; and
4. Tier 4 Reaches include reaches not included in Tiers 1, 2, and 3 and which are medium potential reaches for stabilizing populations and/or low potential reaches for all populations.

Each reach was then given a multiple species score and ranked within its tier. The multiple species score, derived from Table 2, represents the sum of scores for each species using the reach. This two-step process that prioritizes reaches within tiers identifies the most important reaches to multiple populations and important reaches used by a single primary population. Appendix IV includes tables in each watershed description that list reach priorities.

		Population Priority		
		Primary	Contributing	Stabilizing
Reach Potential	High	9	6	3
	Medium	6	4	2
	Low	3	2	1

Table 2. Population Reach Scoring Matrix

E. Reach-level Ranking of Habitat Factors

Reach-level habitat factors are rated on both the individual and multiple population levels. EDT consumer reports (Dot Charts) show the relative importance of protecting, restoring or correcting particular habitat attributes for each species within a given reach. Attributes are rated using five categories: extreme, high, moderate, small, and none. The consumer reports also identify key life history stages occurring within the reach for each species and the relative

importance of various habitat attributes to that life history stage. Individual habitat attribute ratings were also compared across species and compiled into a single multiple species rating for each habitat attribute in a reach. These ratings are provided in Appendix IV for each watershed.

Priorities for habitat protection and restoration are listed below in rank order from highest to lowest:

1. Restore access to quality habitat. Habitat protection and restoration are only effective if fish have access to the habitat. Removal of barriers to substantial areas of good habitat provides important near and long-term benefits to fish. Actions to restore or improve access include removal or repair of blocking culverts, and reconnecting isolated habitats such as side channels, flood plains and wetlands. Among access needs priority will be given to areas benefiting multiple species and/or primary populations.

SSHAP barrier information can assist identifying existing barriers and EDT reach-level habitat analysis can assist in determining the relative benefit of removing the barrier to specific species. Information from the Integrated Watershed Assessment (IWA) can also be used as an indicator when considering the overall quality of the habitat that would be opened up by barrier corrections. For example, functioning hydrological, sediment and riparian watershed processes in the subwatersheds upstream from the barrier, along with EDT reach-level analysis, may indicate the barrier correction would open up high quality habitat.

2. Protect properly functioning watershed functions and habitat conditions. Existing quality habitat is critical to sustaining current fish abundance and productivity. Restoration of habitat after it is degraded is expensive, technically challenging, and not always successful in fully recapturing lost productivity. EDT reach-level analysis assists in identifying reaches that have relatively high preservation values. Appendix IV provides reach analysis information for each watershed. Priority will be given to protection efforts that benefit multiple high priority species. Limiting Factors Analysis and other site specific surveys can also assist in identifying specific protection needs. The IWA results may also be used to indicate where hydrological, sediment and riparian watershed processes are currently functional and may need protection.
3. Restore degraded watershed functions and habitat conditions. Restoration of watershed processes that will sustain properly functioning habitat conditions is the highest priority in this category of actions. While efforts focused on restoring riparian conditions can be implemented on a modest scale, broader efforts at watershed process restoration can be technically challenging and beyond the ability of a single entity to implement. Often, the watershed areas involved encompass thousands of acres and multiple causes. Cause and effect relationships require careful evaluation. And, results can take years to achieve. Large-scale restoration of watershed processes should only be undertaken with the appropriate knowledge and a partnership with the skills and capacity to undertake and sustain large multi-year efforts. The IWA process uses several indicators to identify subwatersheds where riparian, sediment transport, and hydrological process may be impaired. The IWA results suggest areas where further analysis should be considered.

In restoring specific reach-level habitat conditions first priority will also be given efforts benefiting multiple species and/or primary populations. The reach factor ratings in Appendix IV and the multi-life stage/individual reach EDT consumer reports in Appendix VI highlight the relative importance of habitat attributes to population performance.

Priority will be given to projects that will provide both near- and long-term benefits. The long-term success of habitat restoration efforts such as instream restoration, LWD placement, bank stabilization, and gravel placement depend on the watershed processes needed to sustain them. The IWA results suggest areas where impaired watershed processes could adversely affect these types of projects and should be considered when deciding to undertake potentially vulnerable projects.

Addressing a habitat need on a temporary basis may be warranted if it is a significant near-term threat to a primary or contributing population and it is undertaken as an interim step in a more comprehensive effort to restore natural habitat forming processes over the long-term.

The progressive ranking of watersheds, subwatersheds, and reaches and the reach-level rating of habitat provide overall guidance in setting habitat restoration and protection priorities. The Limiting Factor Analyses (LFA) for WRIAs 25 through 29 along with other available technical reports and assessments will be used to further delineate specific habitat needs.

Section 5. Evaluation and Ranking of Habitat Projects

A. Overview

The evaluation and ranking of proposed habitat protection and restoration projects will be based on the following criteria:

1. The benefits to fish as determined by:
 - a. The importance of the fish populations, subwatershed, reach, and habitat attribute(s) targeted by the project;
 - b. The extent to which the proposed project will address or resolve the targeted habitat attribute(s) in the affected reach and the expected benefits to fish;
 - c. The extent to which a project addresses life-history stage needs in the targeted reach or subwatershed;
 - d. How reasonable the project's costs are for the work proposed and the expected benefits; and
2. The level of certainty the proposed project will achieve and sustain the expected benefits.

These criteria are discussed in greater detail below. [Appendix VIII](#) provides the scoring form that will be used by the Board and TAC in evaluating proposed projects. The form shows the relative weights each of the criteria carry.

B. Benefits to Fish

A project's benefits to fish will be determined on the extent to which, it:

1. Targets an important fish population, subwatershed, and reach. As discussed in Section 4 above, subwatersheds and reaches have been ranked based on species and population priorities and the importance of specific reaches to the populations that use them. Projects will be evaluated on the extent to which they have targeted priority populations, subwatersheds and reaches. They will be rated to give higher priority to projects located in the most important subwatersheds and reaches and lower priority to projects targeting the lower rated subwatersheds and reaches.
2. Protects or restores important watershed functions and habitat attributes that limit the targeted population's productivity, abundance, and diversity. EDT consumer reports rate

reach-level habitat attributes based on their importance to population performance from extreme to none. Where several attributes are similarly rated, preference will be given to projects based on the Board's habitat priorities of first providing access to quality habitat, then protecting properly functioning watershed processes and habitat conditions, and, finally, restoring degraded watershed and habitat conditions. LFAs, IWA results and other existing assessments and studies will be used to augment the EDT reach-level habitat attribute ratings in evaluating the importance of targeted attributes.

Projects will be ranked to give higher priority to projects that target the most significant habitat attribute(s) for the highest rated populations and lower priority to projects targeting habitat attributes with little benefit to a lower rated population. Preference will be given to projects that address or resolve needs for the entire reach being treated and lower priority will be given to a project that addresses the targeted attributes in small areas of the reach.

Washington Department of Fish and Wildlife's SSHIAP database and SSHEAR program protocols for assessing barrier severity, habitat quality, and species utilization will be used to evaluate fish barrier priorities.

3. Addresses important life-history stages for the targeted population. Projects should target habitat conditions needed to support critical life-history stage needs for the targeted population(s) in the reach to be restored or protected. EDT consumer reports provide specific information on the life-history stages represented in each reach. Project proposals should clearly identify each species and its life-history stages that will benefit from the proposed action.

Consideration will also be given to a project's contribution to critical life-history stages on a regional level. Some basins, such as the Chinook River, play an important role in the life history of fish stocks from outside the lower Columbia region. (Dewberry, 1997)

4. Demonstrates that costs are reasonable for the work proposed and the benefit to be derived. Given that resources for habitat protection and restoration are limited, projects should be designed and implemented in the most efficient and effective manner possible. Project costs should be commensurate with those for projects of similar nature, scope, and complexity. A project's chance of success can also be enhanced through the use of partnerships that can leverage expertise, contributions of materials and labor, and funding.

C. Certainty of Success

The level of certainty that the project would produce its intended benefit for fish will be assessed based on the extent to which the proposed project:

1. Has a scope that is appropriate to meet the project's goals and objectives.

Projects should have a well-defined scope that is tied directly to its stated goals and objectives. Clear connections between a project's scope and its goals and objectives help assure that project sponsors have clearly identified how they will reach their stated goals and objectives.

The proper scope and success of a project requires a solid understanding of conditions and watershed processes that cause or contribute to the problem or limiting factor being addressed. Projects with a scope and design that account for the causes of limiting conditions and processes will be given priority. For some projects, EDT, IWA, and existing LFA information may be sufficient. More complex problems may require a more

thorough assessment of conditions and watershed processes. This information may be available through existing studies and evaluations. In some cases, additional site-specific assessments and design work may be needed.

1. Applies proven methods and technologies.

The certainty of a project's success can be enhanced through the use of proven and accepted methods and technologies. Projects should utilize approaches and technologies that are commensurate with the nature, scope, and complexity of the problem being addressed. In selecting technologies to be employed in addressing a habitat attribute, sponsors should ensure that larger-scale watershed processes and conditions that can affect the project site have been taken into account.

Innovative or experimental approaches may be acceptable if no proven method exists or it can be shown that they will extend knowledge of restoration methodologies at a reasonable risk. In order to assess whether a project has an adequate supporting technical basis, it will be important that the project proposal addresses considerations listed for its project type contained in the Guidance on Watershed Assessment for Salmon, Part Three (Joint Natural Resources Cabinet, State of Washington, May 2001) ([Appendix XI](#)). LCFRB technical staff and WDFW Watershed Steward will help project sponsors identify existing documents that provide technical support for proposed projects.

2. Is designed, coordinated, and sequenced in concert with other salmon recovery activities within the watershed or basin.

Habitat projects should be designed, coordinated, and sequenced in concert with other salmon recovery activities within a watershed or basin. This can help achieve the greatest benefit to fish in the shortest possible time and with the most efficient use of resources.

Consideration will be given to whether a project is:

- a. An element of an existing comprehensive watershed or basin restoration and protection strategy;
- b. Well coordinated and logically sequenced with other habitat projects completed, underway, or planned for a watershed or basin; and/or
- c. Complementary and supportive of other local and state salmon recovery regulations and programs, including land use and development regulations, critical area ordinances, storm water management programs, shoreline master plans, forest management regulations, etc.

3. Demonstrates that sponsor experience and capabilities are commensurate with project scope and complexity.

The success of a habitat project is dependent on the project sponsor's ability to design, plan, implement and monitor a project. Ideally, project sponsors should have experience in successfully completing projects of similar nature, scope, and complexity. At a minimum, sponsors should indicate how they would acquire needed experience and expertise that they do not possess. Options for doing so could include partnerships with other agencies or organizations, or contracting for needed services.

4. Has community support.

The long-term success of habitat restoration and protection efforts depends on the acceptance and support of local communities. Projects should be designed and implemented in a manner that accommodates local values and concerns. LCFRB places a higher priority on projects that will provide long-term benefits for fish by also promoting community support and involvement in salmon recovery.

5. Demonstrates an effective stewardship (i.e. maintenance, operation and monitoring) plan over the life of the project.

The SRFB has recently changed their policies on monitoring project effectiveness. Submission of a monitoring plan is no longer mandatory by project applicants. **THE SRFB IS NO LONGER FUNDING EFFECTIVENESS MONITORING AS PART OF PROJECT COSTS.** Implementation monitoring costs (ensuring the project was implemented correctly) should be included in the applicants A&E costs. Effectiveness monitoring is defined as determining if the project was successful or not. (See IAC manuals for more details)

The SRFB will select projects for effectiveness monitoring and have an independent party who will apply specific monitoring protocols. If funded by the SRFB, you will be contacted by your SRFB Grant Manager and the party performing the actual monitoring if your project has been chosen for SRFB monitoring. An effective statewide monitoring effort should help standardize monitoring methods and increase our understanding of potential benefits to fish from various project types.

Despite these changes, it is vital that project sponsors still include stewardship provisions (i.e. maintenance, operation and implementation monitoring) as part of any project proposal. They should identify how monitoring efforts would support maintenance of the project and who would perform maintenance and over what period of time. Maintenance of a completed project may be critical to the project's performance and long-term effectiveness.

Section 6. Scoring and Ranking of Habitat Project Proposals

Habitat projects will be scored by the TAC using a score sheet that is based on the evaluation criteria discussed in section 5 above. A sample score sheet is provided in [Appendix VIII](#).

Each project will be scored on both its benefits for fish and certainty for success. As discussed above a project's benefit to fish is determined by the affected populations and their priority, the importance of the reach and the degree to which the proposed correction of a limiting factor or protection of habitat would help to achieve and sustain properly functioning habitat conditions.

Certainty of success is the level of confidence that a project will achieve its goals.

The scores for each project will be used to rate its benefit for fish and certainty of success as high, medium, or low. Based on these designations a project will be assigned to a priority using the matrix below. Within each priority category projects will be ranked based on their combined benefit and certainty scores. Projects in categories 1, 2 and 3 will be recommended for funding.

		Benefits to Fish		
		High	Medium	Low
Certainty of Success	High	Group 1	Group 2	Group 4
	Medium	Group 2	Group 3	Group 4
	Low	Group 4	Group 4	Group 4

Section 7. Strategy Implementation Policies and Measures.

As stated previously, it is the Board's goal to protect and restore the habitat needed to recover and sustain healthy, harvestable populations of salmon and steelhead. While this strategy sets priorities and directions to achieve this goal, it must be implemented in order to achieve the desired benefits for fish. The Board does not itself undertake habitat protection and restoration projects. Rather, it relies on the support, cooperation, and participation of agencies, local governments, tribes, communities, organizations, and individuals to develop and implement habitat projects consistent with its habitat goals and priorities. The policies and actions outlined in this section are intended to build and sustain the support and cooperation needed to achieve the Board's fish recovery and habitat goals and priorities.

A. Community Support and Participation

The Board will work to secure the support, cooperation, and participation of local communities and landowners for fish recovery and habitat restoration and protection.

To be successful habitat restoration and protection efforts must not only be technically sound, they must be responsive to local community and landowner values and concerns. To achieve this, the Board will:

1. Actively engage local communities and affected parties in the development of fish recovery goals, strategies, plans, and programs. Public input will be solicited through public workshops, individual consultations, and distribution of draft documents. Interested parties will be placed on the Board's extensive e-mail distribution list. Board actions will be taken at open public meetings. Board meetings will be rotated to locations throughout the region to facilitate local interaction and participation
2. The Board will work with local governments, federal and state agencies, and community members to develop local habitat restoration programs that are responsive to and, if possible, complement and further local interests.
3. The Board will work with project sponsors and local interests and landowners as necessary to develop habitat projects that address priority needs and local interests.
4. The Board may choose to elevate the ranking of a technically sound habitat project, if doing so would significantly further community support for and/or participation in future habitat restoration and protection efforts in the area.

B. Coordination and Cooperation

The Board will work to coordinate habitat protection and restoration efforts across the region to achieve greater effectiveness and efficiency.

Currently, a number of agencies and organizations are engaged in funding and/or undertaking habitat protection and restoration efforts in the lower Columbia region of Washington. The Board is currently coordinating the development of the Lower Columbia Salmon and Steelhead Recovery Plan and Northwest Power and Conservation Council Sub-basin Plans. It is anticipated that, when approved, these plans will set goals and priorities that will be used by federal and state agencies, tribes, local governments, and organizations in planning and undertaking habitat restoration and protection efforts. In the interim, the Board will;

1. Encourage federal and state agencies, tribes, local governments, and organizations to give consideration to and use this interim strategy in planning, evaluating, funding and/or undertaking habitat projects.
2. Consult with and assist funding agencies and organizations in soliciting and evaluating habitat projects.

C. Leveraging Technical and Funding Resources

The Board will encourage and, where possible, facilitate partnerships that will leverage technical expertise, implementation capacity, funding sources in undertaking habitat projects.

Partnerships can leverage the expertise, capacity, and resources needed to undertake major habitat projects and achieve significant benefits for fish. They can also assist in forging long-term working relationships that will further future habitat protection and restoration efforts. To further such partnerships, the Board will:

1. Give preference to project proposals that significantly leverage expertise, capacity, and resources.
2. Work to arrange partnerships needed to undertake large and complex habitat restoration or protection projects.

D. Development of New Funding Sources

The Board will actively seek out new funding sources to augment funds made available through the SRFB.

While SRFB will likely remain a major source of habitat project funding, the Board will work with agencies and organizations to identify additional funding sources that can be used to undertake projects or to leverage SRFB funds.

E. Development and Support of Habitat Project Sponsors

The Board will work to build and maintain a network of project sponsors with the capacity to successfully undertake habitat projects throughout the region.

The Board relies on a network of agencies, local governments, organizations, and individuals to develop and undertake habitat projects. The ability to successfully undertake and complete priority projects depends on having capable sponsoring organizations throughout the region. Some watersheds have a number of well-organized sponsors, while others have few or none. To help develop and maintain an effective sponsor network, the Board will:

1. Engage and solicit input from project sponsors in developing habitat goals and priorities.

2. Advise prospective sponsors of SRFB and other funding opportunities through the Board's e-mail distribution system and advertisements in local newspapers.
3. Work with and assist local governments, communities, and organizations to develop the capacity to undertake habitat projects in areas that are currently underserved. The Board will help interested parties select a project, develop a proposal, obtain needed technical assistance and advice, and find partners, if necessary. The Board will also assist a new sponsor in dealing with implementation issues as they arise. Finally, the Board may elect to elevate the ranking of a technical proposal if it determined that doing so will help establish a new sponsor in an underserved area.
4. Assist all project sponsors in selecting a priority project and developing a quality project proposal. Sponsor workshops will be held throughout the region to inform sponsors of the SRFB grant procedures and the Board's habitat strategy and procedures for submitting, reviewing, and ranking project proposals. The Board will consult with individual project sponsors when requested to assist in identifying priority projects and securing supporting technical information and assistance.
5. Assist project sponsors, as needed, to successfully implement and complete a project. Such assistance can include consulting with SRFB staff, regulators, and technical resources to resolve implementation issues.

F. Use of Acquisition

Sponsors proposing projects that include acquisition (fee title, conservation easement, development rights) must clearly articulate in their application why acquisition is required to achieve the objectives of the project. If acquisition is being proposed solely for the purpose of protecting habitat, the sponsor must explain why applicable federal, state, and local laws and regulations do not afford the needed level of protection. If fee title acquisition is proposed the sponsor must explain why the acquisition of conservation easements and development rights will not effectively achieve the goals of the project. Finally, before submitting an application proposing acquisition, the sponsor must consult the affected city or county. The sponsor should contact the LCFRB for assistance in identifying the appropriate city or county contact. The sponsor must note comments received from the representative of the affected city or county.

G. Projects on Federal Lands

The minimum-matching share of non-SRFB funds is 15% with the exception that the minimum-matching share for projects on federally owned land is 30%. Projects with a combination of federal and non-federal lands shall be adjusted to the apportionment of the project costs on these lands.

H. Assessments

Habitat assessment needs vary across the region and funds for assessments are limited. In order to ensure that assessment projects effectively address regional information needs and priorities, all assessment proposals shall include the LCFRB as the sponsor or as a co-sponsor. If a prospective sponsor wishes to pursue an assessment project, it should contact Board staff early to discuss the Board's assessment priorities and possible co-sponsorship arrangements.